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Journal of the Society of Arts.

FRIDAY, AUGUST 2, 1867.

Announcements by the Council.

SOCIETY'S VISIT TO THE PARIS EXHIBITION.

Arrangements have been made for the visit of the members to the Universal Exhibition, 1867, as follows :—

The visit will extend from Monday, the 29th of July, to Friday, the 16th of August.

A Reception Room has been provided for the use of the members at No. 43, Rue Saint Georges, where members can have their letters addressed, where they can write their letters, make appointments and arrangements, and where notices of any special matters connected with the visit will be suspended. Members are requested to register their names and addresses here on their arrival in Paris. Lists of Hotels and Lodgings will be provided.

Arrangements have been made by which the Members of the Society of Arts will, through the kindness of the proprietors, be admitted, on the presentation of their cards of membership, to inspect Imperial and Municipal establishments, factories, and workshops in the following list :—

His Excellency the Minister of Public Instruction has most kindly arranged for the Members visiting the Lycées of Paris, and has also further favoured the Society with tickets to view the exhibition of the works of the pupils in the Communal schools, and of the collections made by the Scientific Commission of Mexico.

The Director of the Imperial Mint (La Monnaie) has given instructions that members of the Society, when provided with their cards, which will be prepared for the purpose, shall be admitted to that establishment on Tuesdays and Fridays, at three o'clock.

The Director of the Imperial Observatory has arranged that the Members presenting their cards of membership at that establishment shall be admitted on Saturdays, between half-past two and four o'clock.

Monsieur le Sénateur, Prefect of the Seine, has politely promised to make proper arrangements for the visits of the members to the catacombs, sewers, and municipal establishments.

Through the kindness of M. Belgrand, the water engineer to the City of Paris, permission has been obtained for members to visit the Waterworks of the City of Paris at Menilmontant, on any day to the 5th August inclusive.

The Director of the Public Ways and Promenades of the City of Paris has thrown open the horticultural and other municipal establishments in his department, and has most obligingly tendered his assistance to the members.

M. Le Play, Commissaire-General of the Universal Exhibition, has very kindly expressed his desire to aid the members in any way in his power.

The following gentlemen and companies have politely opened their establishments to the Society :—

MM. J. F. Cail and Cie., engineers, Quai de Billy, No. 48, and Grenelle. Any day of the week, from 6 to 11 a.m., and from 12 to 5.

M. F. Barbedienne has furnished tickets of admission to visit his bronze foundry and workshops, 63, Rue de Lancry, on any day in the week, from 6 a.m. to 5 p.m.

MM. Barbezat and Cie., foundries, 58, Boulevard Prince Eugene, and 95 and 97, Rue Richard-Lenoir. Open to the members without restriction as to the day or hour.

MM. Ch. Christoffe and Cie., gold and silversmiths, 56, Rue de Bondy, will receive a party of the members on any day appointed by the Society, between 12 and 2 o'clock.

MM. Hachette and Cie.'s great publishing establishment will be open to members on any day, between half-past 8 and 11 o'clock, by presenting their cards to M. Fouret, a member of the firm.

M. Ch. Lahure, Imprimerie Générale, 9, Rue de Fleurus, on any day and at any hour, except between 12 and 2 o'clock.

MM. A. Chaix and Cie., printing establishment, 20, Rue Bergère, on Friday in each week.

MM. Mazaroz-Ribaillier and Cie., furniture manufacturers, Exhibition rooms, 20, Boulevard des Filles de Calvaire; manufactory, 4 and 6, Rue Ternaux Popincourt, freely open to the members.

The Directors of the Compagnie du Chemin de Fer de Paris à Orléans have given leave for the members to visit their new passenger station and goods station, on presenting their cards of membership to M. Renault, Chief Architect of the Company, No. 1, Boulevard de l'Hôpital; or to M. Prevel, 42, Quai de la Gare; according as they desire to see the passenger station or the goods station.

The workmen's houses designed by H.I.M. the Emperor Napoleon III., and now in course of construction in concrete by Messrs. W. E. Newton (member of the Society) and E. C. Shepard, in the Avenue Daumesnil, near the Parc de Vincennes, may be inspected any day from 6 a.m. till 6 p.m. Mr. E. Newton, the resident engineer, is usually at the works from 10 till 4, but in his absence the foreman, M. Bourignon, or his deputy, will afford members any information they may require.

Nothing could exceed the politeness with which the various gentlemen have met the requests of the Society, and there is no doubt that in a day or two several other establishments will be added to the list.

Cards of membership, enabling members to take advantage of these arrangements, may be obtained on application to the Society's House, John-street, Adelphi, or at 43, Rue Saint Georges, Paris.

P. LE NEVE FOSTER, *Secretary*.

The following list of hotels will be found useful :—

IN THE NEIGHBOURHOOD OF THE TUILERIES.

Hôtel Meurice, 228, Rue de Rivoli.

" Windsor, 226, "
" Brighton, 218, "
" Wagram, 208, "
" Rivoli, 202, "
" du Louvre, 166, "

ON OR NEAR THE PRINCIPAL BOULEVARDS.

Grand Hôtel, 12, Boulevard des Capucines.

Grand Hôtel des Capucines, 37, Boulevard des Capucines.

Hôtel Scribe, 1, Rue Scribe.

" de Bade, 32, Boulevard des Italiens.
" du Tibre, 8, Rue du Helder.
" du Helder, 9, Rue du Helder, Boulevard des Italiens.
" Brezil, 16, Rue du Helder.
" de Lancastre, 22, "
" de l'Amirauté, Rue Neuve Saint Augustin.
" Choiseul, 7, Rue de Choiseul.
" des Deux Mondes, 8, Rue d'Antin.
" des Etats Unis, 16, Rue d'Antin.
" de la Grande Bretagne, 14, Rue Caumartin.

RUE ST. HONORÉ, &c.

Hôtel de Lille et d'Albion, 223, Rue St. Honoré.

" St. James, 211, Rue St. Honoré.
" Choiseul, 241, Rue St. Honoré.
" du Danube, 11, Rue Richepance.
" Richepance, 14, Rue Richepance, near the Madeleine.
" de l'Amirauté, 20, Rue Duphot.

RUE DE LA PAIX, PLACE VENDÔME, &c.

- Hôtel de la Paix, 32, Rue de la Paix.
 " Westminster, 11, Rue de la Paix.
 " Mirabeau, 8, "
 " Bristol, 5, Place Vendôme.
 " du Rhin, 4, Place Vendôme.
 " Castiglione, 12, Rue Castiglione.

PALAIS ROYAL AND BOURSE.

- Hôtel des Etrangers, 3, Rue Vivienne.
 Grand Hôtel de France et d'Angleterre, 72, Rue Richelieu.
 Hôtel d'Angleterre, 56, Rue Montmartre.
 " Bergère, 32, Rue Bergère.
 Grand Hôtel de la Marine, 3, Rue des Vieux Augustins.
 Grand Hôtel d'Albion, 20, Rue Bouloi.
 Hôtel Bouloi, 5, Rue Bouloi.
 Grand Hôtel de la Bourse, 15, Rue Nôtre Dame des Victoires.

NEIGHBOURHOOD OF THE NORTHERN RAILWAY.

- Hôtel de Chemin de fer du Nord, opposite the Railway Station.

- Grand Hôtel du Nord, 45, Rue Lafayette.
 Grand Hôtel de Strasbourg, 78, Boulevard de Strasbourg.
 Hôtel Violet, Passage Violet, Faubourg Poissonnière.

BETWEEN THE WESTERN RAILWAY STATION AND THE MADELEINE.

- Hôtel des Etrangers, 24, Rue Tronchet.
 " Tronchet, 22, "
 " Folkestone, 9, Rue Castellane.
 " Bedford, 17, Rue de l'Arcade.
 " de l'Arcade, 43, Rue de l'Arcade.
 " Navarin, Rue Navarin.

SOUTH SIDE OF THE SEINE.

- Hôtel d'Amsterdam, 69, Rue Saint André des Arts.
 " des Beaux Arts, 1, Rue Beaux Arts.
 " Bretagne, 20, Rue de Seine.
 " " 46, St. André des Arts.
 " de Breteuil, 1, Rue Dauphin.
 " Clovis, 69, Rue Monsieur le Prince.
 " Suffren, Avenue Suffren, Champ de Mars.

RAILWAYS AND STEAMBOATS.—The terminus of the Auteuil and Exhibition Railway is at the Western Station, Place du Havre. 2nd class carriages only 50c., intermediate stations 40c. Trains leave the terminus at 27 minutes, and the Exhibition at 25 minutes past each hour; there is an extra up train at 5.57. The Circular Railway (Chemin de Fer de Ceinture) has stations all round Paris, and joins the preceding at Auteuil. The large omnibuses of the American Railway run from the Bourse, and carry passengers for the Exhibition to the Pont d'Alma. Steamboats run from the Place de la Concorde every quarter of an hour for the Exhibition. Landing stage on the Paris side of the Pont de Jena. Other steamboats ply between the Champ de Mars and the Ile de Billancourt. Landing stage on the lower side of same bridge.

NUMBERS OF HOUSES IN STREETS.—Even Nos. on right side, odd Nos. on left side of street, progressing in direction of the stream of the river, or commencing from the river in transverse streets.

POSTE RESTANTE.—Letters addressed "Poste Restante" to be applied for at the head post-office, 9, Rue Jean-Jacques Rousseau; but members can have their letters addressed to No. 43, Rue St. Georges.

CAB FARES IN PARIS.—Two kinds of cabs—single seat for two; double seat for four.

Fare either by the "hour" or the "course," at the option of the hirer ("course" any distance without stoppage).

Fares—Two-place cab, 2f. per hour; 1.50 f. per course; four-place cab, 2.25 f. per hour; 1.70 f. per course.

Driver's usual gratuity, 5 sous per hour; 3 or 4 sous per course.

Extra charge between 12.30 night and 6 morning.

" " when taken from "Remise" (coach-house).
 " " beyond the fortifications.
 " " for luggage.

Ticket containing full particulars of authorised charges always to be given by the driver on entering his cab.

OMNIBUS FARES.—30 centimes (3d.), inside; 15 centimes (1½d.), outside.

MONEY.—Gold:—20 francs, 10 francs, and 5 francs. Silver:—2 francs, 1 franc, ½ franc, and 20 centimes. Copper:—10 centimes (2 sous) = 1d.; 5 centimes (1 sou) = ½d. £1 = 25 francs, usual exchange.

ARTIZANS' VISIT TO PARIS.

Her Majesty's Government have granted to the Society of Arts, in aid of the fund now being raised by the Society for assisting workmen, specially selected from various trades, to visit and report on the Paris Exhibition, the sum of £500, conditional on the Society raising a like amount by public subscription.

The following is the list of subscriptions up to the present date:—

H.R.H. THE PRINCE OF WALES, President ..	£31	10	0
HER MAJESTY'S GOVERNMENT (conditional) ..	500	0	0
Society of Arts	105	0	0
Earl Granville, K.G.	5	0	0
Lord de L'Isle	10	0	0
Thomas Twining	2	2	0
Sir J. P. Boileau, Bart.	5	0	0
George Godwin, F.R.S.	1	1	0
Vice-Chancellor Sir W. Page Wood, F.R.S. ..	10	0	0
W. H. Bodkin (Assistant-Judge)	3	3	0
Sir Rowland Hill, K.C.B.	3	3	0
Benjamin Shaw	2	2	0
Alfred Davis	10	10	0
Eugène Rimmel	5	5	0
Frederick Mocatta	2	2	0
James Marshall	2	2	0
Robert Dawbarn	1	0	0
Henry Vaughan	10	10	0
Philip Sancton	5	0	0
Somerset A. Beaumont	5	0	0
Decimus Burton, F.R.S.	1	0	0
W. Botly	1	1	0
Professor Robert Bentley	2	2	0
John Stuart Mill, M.P.	1	1	0
G. F. Wilson, F.R.S.	2	2	0
Henry Creed	1	1	0
The Marquis of Salisbury, K.G.	10	0	0
D. Robertson Blaine	2	2	0
William Hawes	2	2	0
Seymour Teulon	1	1	0
G. N. Hooper	2	2	0
Lord Taunton	5	0	0
Henry Cole, C.B.	1	0	0
A. Robb	1	1	0
S. Andrews	1	1	0
Thomas Dixon	1	1	0
Charles Telford	1	1	0
Edmund Burke	2	0	0
W. H. Gore Langton, M.P.	5	0	0
J. R. Fowler	1	0	0
John Rutson	1	1	0
W. Fothergill Cooke	2	2	0
J. P. Gassiot, F.R.S.	5	5	0
The Duke of Devonshire	10	0	0
Messrs. Chawner and Co.	2	2	0
Chas. Brooke, F.R.S.	1	1	0
T. Chappell	2	2	0
C. Candy	2	0	0
Alfred Haines	2	2	0
Major-General Sir William Gordon, K.C.B. ..	2	2	0
Bartlett Hooper	2	2	0
F. Richardson	1	1	0

Carry forward £796 8 0

Brought forward	£796	8	0
J. Sharples	3	3	0
Henry Johnson	2	2	0
C. Skipper, jun.	1	1	0
G. T. Saul	1	1	0
Alderman D. H. Stone	5	5	0
G. H. Walker	1	1	0
R. Worthington	2	2	0
A. W. Miles	2	2	0
J. Harris Heal	2	2	0
John Bell	1	0	0
Messrs. Mander and Co.	2	2	0
B. S. Cohen	1	1	0
John Corbett	1	1	0
J. Zaehnsdorf	0	10	6
Major-General Viscount Templetown, C.B.	5	0	0
J. Pearce	3	3	0
Messrs. Huntley and Palmer	2	2	0
A. Glendining, jun.	1	1	0
A. Trevelyan	2	2	0
S. Harrington	1	1	0
Montague Ainslie	2	2	0
James Bentley	2	2	0
Capt. R. P. Oldershaw	1	0	0
E. C. Tufnell	2	2	0
Samuel Redgrave	1	1	0
Joseph Lockett	2	2	0
Messrs. Spicer, Bros.	4	4	0
John Tolhurst	1	1	0
Lord Ebury	5	0	0
C. Lawson	1	0	0
John Horton	1	1	0
W. Baker	1	1	0
Henry Briggs	1	1	0
James Heather	1	1	0
H. Reader Lack	1	1	0
C. Silvy	1	1	0

Collected in response to a Circular issued by the
Birmingham Chamber of Commerce.

G. Dixon, M.P., Birmingham	5	5	0
Messrs. Smith and Wright, Birmingham	5	5	0
Messrs. Griffiths and Browett, Birmingham	5	5	0
Henry Weiss, Birmingham	2	2	0
W. H. M. Blews, Birmingham	2	2	0
W. Middlemore, J.P., Birmingham	5	5	0
Thomas Lloyd, Birmingham	2	2	0
Messrs. Elkington and Mason, Birmingham	5	5	0
Messrs. John Hardman and Co., Birmingham	2	2	0
Messrs. F. and C. Osler, Birmingham	5	5	0
The Proprietors of the <i>Birmingham Journal and Daily Post</i>	2	2	0
The Proprietors of the <i>Birmingham Gazette</i>	2	2	0
R. L. Chance, Birmingham	2	2	0
T. Avery, Birmingham	2	2	0
W. Tonks and Sons, Birmingham	2	2	0
W. Lucas Sargant, Birmingham	2	2	0
— Mountain (Messrs. Walter, May, and Co.), Birmingham	2	2	0
J. A. Williams, Birmingham	2	2	0
Henry Charlton, Birmingham	2	2	0
W. Bartlett and Sons, Birmingham	5	0	0
John P. Turner, Birmingham	0	10	6
W. H. Avery, Birmingham	2	2	0
Messrs. Peyton and Peyton, Birmingham	3	3	0
James Cartland, Birmingham	2	2	0
Messrs. Smith and Chamberlain, Birmingham	2	2	0
Messrs. Baker and Son, Birmingham	2	2	0
Messrs. Hinks and Wells, Birmingham	2	2	0
Messrs. Van Wart and Co., Birmingham	5	0	0
Messrs. Evans and Askin, Birmingham	2	2	0
C. Shaw, Birmingham	2	2	0
James Barwell, Birmingham	1	1	0

Total £952 15 0

Messrs. J. M. Johnson and Sons have kindly

placed at the disposal of the Council a number of their five-shilling English Catalogues of the Exhibition, sufficient to present each workman with a copy.

Subscriptions may be forwarded to the Financial Officer, at the Society's House.

The Council are now prepared to receive the names of any workmen recommended by their respective trades as fit and proper persons to undertake this important duty on behalf of their fellow workmen.

PRIZES FOR ART-WORKMEN.*

The Council of the Society of Arts hereby offer Prizes for Art-Workmanship, according to the following conditions:—

I. The works to be executed will be the property of the producers, but will be retained for exhibition, in London and elsewhere, for such length of time as the Council may think desirable.

II. The exhibitors are required to state in each case the price at which their works may be sold, or, if sold previously to exhibition, at what price they would be willing to produce a copy.

III. The awards in each class will be made, and the sums specified in each class will be paid, provided the works be considered of sufficient merit to deserve the payment; and, further, in cases of extraordinary merit additional awards will be given, accompanied with the medal of the Society.

IV. Before the award of prizes is confirmed, the candidates must be prepared to execute some piece of work sufficient to satisfy the Council of their competency.

V. *Bona-fide* Art-workmen only can receive prizes.

VI. Although great care will be taken of articles sent for exhibition, the Council will not be responsible for any accident or damage of any kind occurring at any time.

VII. Prices may be attached to articles exhibited and sales made, and no charge will be made in respect of any such sales.

VIII. All the prizes are open to male and female competitors, and in addition, as regards Painting on Porcelain, Cameo-cutting, Engraving on Glass, Decorative Painting, and Wall Mosaics, a second set of prizes, of the same amounts, will be awarded among female competitors. If a female desire to compete in the female class only, she must declare her intention accordingly. The originals of the works prescribed may be seen at the South Kensington Museum.

IX. Any producer will be at liberty to exhibit, either in his own name or through his workmen, any work or works as specimens of good workmanship, in the various classes, provided that the work or works be accompanied with a statement of the name or names of the artisans who executed their respective portions; and if the work or works be sufficiently meritorious, extra prizes will be given to the artisans who have executed them.

X. Artizans may, if they think fit, exhibit works executed by them after other designs than those stated above, in any of the classes. Such works may contain the whole or portions of the prescribed designs, and must

* The Worshipful Company of Salters contribute £10 annually to this prize fund. The Worshipful Company of Goldsmiths contribute £15 "for the encouragement of workmen in the precious metals." Particulars of the Goldsmiths' Company's prizes are given. The North London Exhibition prize consists of the interest of £167 7s. 3d., invested in the name of the Society of Arts, to be awarded by the Council "for the best specimens of skilled workmanship" at the Society's Exhibition of the works sent in for the prizes named above.

be of a similar style and character. Competitors must specify the class in which they exhibit. If the works be sufficiently meritorious extra prizes will be awarded.

XI. All articles for competition must be sent in to the Society's house on or before Saturday, the 21st of December, 1867, and must be delivered free of all charges. Each work sent in competition for a Prize must be marked with the Art-workman's name, or, if preferred, with a cypher, accompanied by a sealed envelope giving the name and address of the Art-workman. With the articles, a description for insertion in the catalogue should be sent. The works will be exhibited at the Society's House, and afterwards at the South Kensington Museum.

Casts may be seen at the Society of Arts, Adelphi, London, and the Schools of Art at Edinburgh, Dublin, Manchester, Glasgow, Birmingham, and Hanley in the Potteries.

Photographs and rough casts in metal, &c., may be purchased at the Society of Arts, John-street, Adelphi, at the prices named.

The plaster casts of the examples in classes 2 and 4 (except bas-relief 4a) may be obtained from Mr. Franchi, 15, Myddelton-street, Clerkenwell, E.C.; the other casts from Mr. D. Brucciani, Galleria delle Arti, 40, Russell-street, Covent-garden, W.C.

* * The Council are happy to announce that several of the works which received first prizes in the competitions of 1863, 1864, 1865, 1866, and 1867, have been purchased by the Department of Science and Art, to be exhibited in the South Kensington Museum and the Art Schools in the United Kingdom.

FIRST DIVISION.

WORKS TO BE EXECUTED FROM PRESCRIBED DESIGNS.

For the successful rendering of the undermentioned designs in the various modes of workmanship according to the directions given in each case.

CLASS 1.—CARVING IN MARBLE, STONE, OR WOOD.

(a.) *The Human Figure*.—One prize of £15 for the best, and a second prize of £7 10s. for the next best, work executed in marble or stone, after part of a frieze of a chimney-piece, by *Donatello*, No. 5,795, in the South Kensington Museum; or a relievo in terra cotta, Amorini supporting an entablature; original in the South Kensington Museum, No. 11,940. Dimensions—Two-thirds the size of the cast (linear).—The design may be adhered to strictly or adapted to any architectural purpose.

[Cast—Fifteen Shillings; Photograph—One Shilling.]

(b.) *Ornament*.—One prize of £10 for the best, and a second prize of £5 for the next best work, executed in marble, stone, or wood after a carved chair-back in the South Kensington Museum. Dimensions—To be two-thirds of the cast (linear).

[Cast—Twelve Shillings. Photograph—One Shilling.]

(c.) *Ornament*.—One prize of £10 for the best, and a second prize of £5 for the next best, work executed in stone, after a *Gothic bracket* in the Architectural Museum. Dimensions the same as the cast. In this design the details may be improved by the introduction of small animals, and the human head may be changed according to the taste of the art-workman.

[Cast—Ten Shillings; Photograph—One Shilling.]

(d.)—One prize of £20 for the best, and a second prize of £10 for the next best, work carved in wood after a panel in carved oak. Original in South Kensington Museum, No. 274. Dimensions—Optional.

[Photograph—Sixpence.]

(e.)—One prize of £15 for the best, and a second prize

of £7 10s. for the next best, work carved in wood after the entablature of a chimney-piece carved in wood, in the South Kensington Museum, No. 85'64. Dimensions—Same size as original.

[Photograph—One Shilling.]

(f.) *Ornament*.—One prize of £10 for the best, and a second prize of £5 for the next best, work carved in wood after an *Italian picture frame* in the possession of Henry Vaughan, Esq. Dimensions optional.—This design may be adhered to strictly or adapted in such manner as the workman may think fit.

[Photograph—Two Shillings.]

(g.) *Ornament carved and gilt*.—One prize of £10 for the best, and a second prize of £5 for the next best, work executed in wood, carved and gilt after a *Console Table* in the South Kensington Museum, No. 6,497, of the period of Louis XVI. The work to be carved roughly in wood, then to be prepared in the white by a gilder, then cut up or carved in the white by the carver, then to be gilt in mat and burnished gold. As such work may probably be executed by two persons, the prize will be apportioned as the judges may determine.

[Photograph—One Shilling.]

CLASS 2.—REPOUSÉE WORK IN ANY METAL.

(a.) *The Human Figure as a bas-relief*.—One prize of £10 for the best, and a second prize of £5 for the next best, work executed after the Martelli Bronze Mirror Case, No. 8,717, in the South Kensington Museum—dimensions, 6½ inches diameter; or a panel in low relief, the Virgin and Child, in South Kensington Museum, No. 66'66. Dimensions—One-third of original.

[Cast of Mirror Case—Two Shillings; Photograph—One Shilling. Cast of Bas-relief, 3s. 6d.]

(b.) *Ornament*.—One prize of £5 for the best, and a second prize of £3 for the next best, work executed after a *tazza* in silver, date 1683, the property of Sir W. C. Trevelyan, Bart., now in the South Kensington Museum. Dimensions—The same as the model.

[Photograph—One Shilling.]

CLASS 3.—HAMMERED WORK, IN IRON, BRASS, OR COPPER.

Ornament.—One prize of £7 10s. for the best, and a second prize of £5 for the next best, work executed after a knocker in wrought iron, in the South Kensington Museum, No. 9,007.

If the work is executed in brass or copper, it should be rendered subject to the conditions of these metals, either as split and riveted or partly beaten from the sheet, and the awards will be made in view of these conditions. The work must not be covered with colour or any coating which masks the workmanship.

[Photograph—One Shilling and Threepence.]

CLASS 4.—CARVING IN IVORY.

(a.) *Human Figure in the round*.—One prize of £15 for the best, and a second prize of £10 for the next best, work executed after an ivory plaque of Silenus and Amorini, by *Fiamingo*, No. 1,059, in the South Kensington Museum; dimensions—five inches greatest length; or after a relievo in marble, the Virgin and Child, No. 4,233 in the South Kensington Museum. Dimensions—To be reduced in height by one-third (linear).

[Cast of the Plaque—Two Shillings; and Photograph of the Virgin and Child—One Shilling each.]

(b.) *Ornament*.—One prize of £7 10s. for the best, and

a second prize of £5 for the next best, work executed after an ivory crotzer head, in the South Kensington Museum, No. 214.'65. Dimensions—The same as the cast.

[Cast—One Shilling.]

CLASS 5.—CHASING IN BRONZE.

(a.) *The Human Figure*.—One prize of £10 for the best, and a second prize of £5 for the next best, work executed after a panel in low relief, the Virgin and Child, in the South Kensington Museum, No. 66.'66.

A rough casting in bronze, on which the chasing must be executed, will be supplied by the Society at cost price.

[Plaster Cast—Three Shillings and Sixpence.]

(b.) *Ornament*.—One prize of £10 for the best, and a second prize of £7 10s. for the next best, work executed after a silver gilt missal cover, in the South Kensington Museum, No. 2,639.

[Photograph—One Shilling.]

CLASS 6.—ETCHING AND ENGRAVING ON METAL—NIELLO WORK.

Prizes of the Goldsmiths' Company.

Ornament.—One prize of £10 for the best, and a second prize of £5 for the next best, work executed after arabesques by Lucas Van Leyden, A.D. 1528. No. 18,968 in the South Kensington Museum. To be engraved the height of the photograph, and, if round a cup or goblet, repeated so as to be not less than nine inches in length when stretched out.

[Photograph—Sixpence.]

CLASS 7.—ENAMEL PAINTING ON COPPER OR GOLD.

(a.) *The Human Figure*.—One prize of £10 for the best, and a second prize of £5 for the next best, work executed after a panel in low relief, the Virgin and Child, in the South Kensington Museum, No. 66.'66. Ground to be blue. Dimensions—Half size of original.

[Photograph—One Shilling; Cast, Three Shillings and Sixpence.]

(b.) *Ornament*.—One prize of £5 for the best, and a second prize of £3 for the next best, work executed after the back of a plate, No. 8,428, in the South Kensington Museum. Ground to be blue. Dimensions—The same as the Photograph.

[Photograph—Sixpence.]

CLASS 8.—PAINTING ON PORCELAIN.

(a.) *The Human Figure*.—One prize of £10 for the best, and a second prize of £5 for the next best, work executed after a photograph of a drawing by *Raphael*, No. 20 in the South Kensington Museum. Dimensions—The same as the Photograph. This work is to be coloured according to the taste of the painter.

[Photograph—Ninepence.]

(b.) *Ornament*.—One prize of £5 for the best, and a second prize of £3 for the next best, work executed after a photograph of ornament by *Aldegrever*, No. 2,118 in the South Kensington Museum, and coloured according to the taste of the painter, with a gold ground. Dimensions—Double the size of the Photograph (linear).

[Photograph—Sixpence.]

N.B.—A second set of prizes of the same amount is offered to female competitors. See conditions, Section VIII.

CLASS 9.—DECORATIVE PAINTING.

(a.) *Ornament*.—One prize of £5, and a second prize of

£3, for a work, executed after a photograph of ornament by *Aldegrever*, in the South Kensington Museum, No. 2,118. Dimensions—length, 3 feet.

[Photograph—One Shilling.]

(b.) *Ornament*.—One prize of £5, and a second prize of £3, for a work, executed after a *picture frame*, in the South Kensington Museum, No. 7,820. Dimensions—5 feet by 3 feet 11½ inches, outside measure. The works to be executed on canvass, either with or without stretchers, in cool colours. Some lines of the mouldings may be gilt.

[Photograph—One Shilling and Sixpence.]

N.B.—A second set of prizes of the same amount is offered to female competitors. See conditions, Section VIII.

CLASS 10.—INLAYS IN WOOD (MARQUETRY, OR BUHL), IVORY OR METAL.

Ornament.—One prize of £5 for the best, and a second prize of £3 for the next best, work executed after a guitar inlaid with ivory, ebony, and mother-o'-pearl. The ornament to be of the same dimensions as the original, but may be applied to any object. No. 9,611 in the South Kensington Museum.

[Photograph—Sixpence.]

CLASS 11.—CAMEO CUTTING.

(a.) *Human Head*.—One prize of £10 for the best, and a second prize of £5 for the next best, work executed after a bust of *Clytie* in the British Museum—The head only.

[Cast of the Head—Five Shillings.]

N.B.—A second set of prizes of the same amount is offered to female competitors. See conditions, Section VIII.

CLASS 12.—ENGRAVING ON GLASS.

Ornament.—One prize of £10 for the best, and a second prize of £3 for the next best, work executed after arabesques by Lucas Van Leyden, A.D. 1528. No. 18,968 in the South Kensington Museum. To be engraved the height of the engraving; and if round a glass or goblet, repeated so as not to be less than 9 inches long when stretched out.

[Photograph—Sixpence.]

N.B.—A second set of prizes of the same amount is offered to female competitors. See conditions, Section VIII.

CLASS 13.—WALL MOSAICS.

Human Head.—One prize of £10 for the best, and a second prize of £7 10s. for the next best, work executed after a *Female Head* (over the lame cripple) in the cartoon of the "Beautiful Gate." The dimensions of the work should be regulated by the size of the tesserae proposed to be used, which size may be left to the choice of the artist. Although desirable, it is not necessary to execute the whole subject in actual mosaic. The original is at the South Kensington Museum. Tesserae of two sizes may be obtained from Messrs. Minton, Stoke-upon-Trent; Messrs. Maw and Co., Brosely, Shropshire; Messrs. Powell and Sons, Temple-street, Whitefriars; and Messrs. Jesso Rust and Co., Carlisle-street, Lambeth.

[Photograph—One Shilling.]

N.B.—A second set of prizes of the same amount is offered to female competitors. See conditions, Section VIII.

CLASS 14.—GEM ENGRAVING.

(a.) *Human Head*.—One prize of £10 for the best, and a second prize of £5 for the next best, work executed after a cameo portrait of *Savonarola*, No. 7,541 in the

South Kensington Museum. Dimensions—The same as the cast.

[Cast—Sixpence.]

(b.) *Full-length Figure*.—One prize of £10 for the best, and a second prize of £5 for the next best, work executed after a small Wedgwood medallion, No. 5,827 in the South Kensington Museum. Dimensions—The same as the cast.

[Cast—Sixpence.]

CLASS 15.—DIE SINKING.

Human Head.—One prize of £10 for the best, and a second prize of £5 for the next best, work executed after a Wedgwood Medallion in the South Kensington Museum, No. 3,470. Dimensions—

[Photograph—Sixpence.]

CLASS 16.—GLASS BLOWING.

Ornament.—One prize of £7 10s. for the best, and a second prize of £5 for the next best, work executed after an original in the South Kensington Museum, No. 6,785. Dimensions—As given in the wood engraving.

[Photograph—Sixpence.]

CLASS 17.—BOOKBINDING.

(a.) *Bookbinding*.—One prize of £7 10s. for the best and a second prize of £5 for the next best, work executed in bookbinding, after a specimen in the South Kensington Museum, No. 16,460. The work to be bound should be some classical author of the size given. Dimensions—The same as the photograph.

[Photograph—One Shilling.]

CLASS 18.—EMBROIDERY.

Ornament.—One prize of £5 for the best, and a second prize of £3 for the next best, work executed, either after *Two Angels* in an example in the South Kensington Museum, No. 1194,64, or an Italian Silk in the South Kensington Museum, No. 7,463, which may be adapted to a screen. Dimensions—According to the taste of the embroiderer.

[Photograph—German, Sixpence; Italian, One Shilling.]

CLASS 19.—ILLUMINATIONS.

Ornament.—One prize of £5 for the best, and a second prize of £3 for the next best, copy made from an Altar Card, attributed to Giulio Clovio, in the South Kensington Museum, No. 2,958, or from a MS. border, date 1450, No. 3,057, in the South Kensington Museum. Dimensions—One-half larger than the Photograph (linear).

[Photograph—Two Shillings.]

SECOND DIVISION.

CLASS 20.—WOOD CARVING.

(a.) *Human figure in the round, in alto or in bas relief. Animals or natural foliage may be used as accessories.* 1st prize of £25 and the Society's Silver Medal. 2nd prize of £15. 3rd prize of £10.

(b.) *Animal or still-life. Fruit, flowers, or natural foliage may be used as accessories.* 1st prize of £10. 2nd prize of £7 10s. 3rd prize of £5.

(c.) *Natural foliage, fruit, or flowers, or conventional ornament, in which grotesque figures or animals may form accessories, preference being given where the work is of an applied character for ordinary decorative purposes, as representing commercial value.* 1st prize of £10. 2nd prize of £7 10s. 3rd prize of £5.

(By order)

P. LE NEVE FOSTER, *Secretary*.

Proceedings of the Society.

FOOD COMMITTEE.

ADULTERATION OF FOOD.

Through the kindness of Lord Stanley, the following information has been furnished to the Committee in reference to the laws concerning the adulteration of food in Norway and Denmark:—

NORWAY.

Criminal Code, Cap. 21, par. 3, sec. C.

Anyone who, with intent to defraud, sells goods knowing the same to be adulterated, shall be liable to punishment with imprisonment, or hard labour of the 5th class (I.).

Criminal Code, Cap. 21, par. 4.

Anyone who with intent to defraud sells articles of food adulterated with matter injurious to health shall be punished with hard labour of the 5th class.

Criminal Code, Cap. 21, par. 5.

If the offence named in section C be committed as regards food or medicines, or anything appertaining to the sustenance of man, and the offender is aware that any portion of the same be composed of matter injurious to health, whether it be employed during its manufacture, or be added subsequently, shall be punished with hard labour of the 4th (2) or 5th class.

Be the offender a merchant, or person earning his livelihood by preparing or vending such goods, he shall be liable to lose his license; and should any one's health be impaired, or life be sacrificed to the culpability of such offender, he shall, in the first instance, be liable to hard labour of the 2nd class (3) or 3rd class (4), and in the latter instance to hard labour of the 1st (5) or 2nd class.

CONCERNING THE USE OF FALSE WEIGHTS OR MEASURES.

The manufacture and sale of proper weights and measures is under control publicly instituted; and all weights and measures must consequently be adjusted, and subsequently stamped. At least once during each year, or as often as there may be reasons for so doing, it shall be the duty of the head of the police force of each town to inspect such weights and measures in use.

For further particulars see paragraphs 18—22 of the Law of July 28th, 1824, copies of which are subjoined. Penalties therein are still in force.

Criminal Code, Cap. 2, par. 4.

Whosoever shall be guilty of feloniously counterfeiting the stamps or marks used by the authorities for marking or stamping weights and measures shall be punished with hard labour of the 4th or 5th class.

Criminal Code, Cap. 2, par. 5.

Whosoever uses weights or measures knowing them to be counterfeited, as above cited, shall be liable to hard labour of the 4th or 5th class.

Criminal Code, Cap. 2, par. 6.

Whosoever shall manufacture articles, specified in paragraph 4, namely, stamps or marks, but without criminal intent, shall be liable to a fine or imprisonment.

Criminal Code, Cap. 21, par. 4.

Whosoever, with intent to defraud, uses for purposes of trade or otherwise, weights or measures of improper dimensions, shall be punished with hard labour of the 5th class.

Whosoever, without intent to defraud, uses unadjusted weights or measures for purposes of trade, or otherwise, shall be liable to a fine and the confiscation of the goods thus weighed or measured; and whosoever uses weights or measures which he knows to have been adjusted, but which have subsequently been tampered with, shall be liable to a fine, if acquainted with the circumstance.

Such weights and measures shall be deemed unfit for further use; should, however, the party to whom they belong promise to readjust the same, this restriction may be modified.

In accordance with ancient and hitherto enforced regulations, all fish, and preparations of the same, were bound to be inspected, and subsequently stamped, as to quality, and barrels were opened with a view to inspect the quantity therein contained. This inspection was formerly obligatory, but by the decree of September 15, 1851, the necessity of such inspection has been removed. For the town of Bergen there are still regulations for the inspection of herrings for exportation.

PUNISHMENTS REFERRED TO IN THE FOREGOING.

- (1). From six months to three years.
- (2). Three years, and not exceeding six years.
- (3). Seven years, and not exceeding twelve years.
- (4). Six years, and not exceeding nine years.
- (5). For life.

DENMARK.

Copenhagen, April 25, 1867.

MY LORD,—In compliance with the instructions contained in your lordship's despatch, No. 3, of the 2nd instant, I have the honour to transmit to your lordship herewith, copy, together with translation, of two paragraphs of the Danish Criminal Code, referring to frauds by the use of false weights and measures and by adulteration of articles of food.

I should add that there is a local board established in Copenhagen, whose duty it is to attend to all matters concerning the sanitary conditions of the town, and whose power extends to the examination of every article of food brought to market.

I have, &c.,
(Signed) F. C. FORD.

To Lord Stanley.

Paragraph 277 of the Danish Criminal Code.

Any one who fraudulently makes false measures or weights, or alters proper measures or weights, also any one who uses such false instruments for the purpose of deceiving others, shall be punished with imprisonment, with bread and water, for a period not less than five days, or with labour in the House of Correction for a period not exceeding two years. Under special circumstances of an aggravated nature, as also when the crime is repeated, the punishment may be inflicted for a period not exceeding six years' imprisonment. Any one who makes use of weights or measures in the exercise of his trade which are not legally adjusted, or which, by time or use, have become deteriorated, shall for the first offence be liable to a penalty not exceeding 100 Rix-dollars, £11 2s. 3d., and in case of repetition to a higher penalty or imprisonment.

Paragraph 278.

Likewise, as stated in the first part of the foregoing paragraph, any one who adulterates goods (articles of food), or who fraudulently furnishes goods or other articles with a public stamp or mark with a view of making the same appear real and good, or who fraudulently procures such stamp or mark on articles which are not fit for it; also anyone who without right applies the stamp or mark of others upon articles which are of inferior quality to that which the stamp or mark would indicate, shall be punished. In case the articles upon which the stamp or mark of other persons is applied without their sanction are not of very inferior quality, the punishment stipulated in the second part of the preceding paragraph shall be applicable, and proceedings will only be taken against the offending party should the party who has been wronged request it.

The above law shall likewise be applicable with regard to minor adulterations which may be practised by retailers, and by which any one may suffer only a trifling loss.

Proceedings of Institutions.

HUNSLET MECHANICS' INSTITUTION.—The report for the last year, in reviewing the progress of the Institution, states that there is no cause for despondency. Since the date of the last report, the rules of the Institution have undergone a thorough revision, and are now reprinted; and the committee venture to assert that they consider them calculated to promote a more healthy condition than existed heretofore. The number of members on the 31st December, 1866, was 336, and they may be classed as follow:—82 paying at the rate of 10s. per annum, 119 at 8s. per annum, 101 at 6s. per annum, 34 at 4s. per annum. When compared with the number of members on the books on the 31st December, 1865, there is an increase of 12. The number of persons who have entered and re-entered during the year is 180, while 102 have withdrawn. The quarter commencing with October experienced a considerable addition to the numbers—73 having entered during that month alone. But this is sufficiently accounted for by the increased advantages offered to members wishing to join the evening classes, and partly, too, by the attractions supplied in the lectures and entertainments. Still, out of a population of upwards of thirty-three thousand, and chiefly composed of the working classes, the numbers ought to be far larger. The committee think they possess all the machinery necessary to render a Mechanics' Institution a successful one, lacking only one matter—the support of the artisans themselves. This is a cause of great regret. It must not, however, be forgotten that the generally prosperous state of trade in this district has made large demands on the labour of those who might otherwise be expected to flock to the Mechanics' Institution. The subscription of members amount to £94 17s. 5d., this sum being less than in 1865; the principal falling off occurring during the summer months, but partly also owing to many members being in arrears. As regards the educational department, the day schools and the whole of the classes are in full and satisfactory operation. The total number on the books is 275:—Day school—Boys, 39; girls, 36; preparatory, 88; total, 163. Evening classes—Male, 45; female, 55; drawing, 12; total, 112. These figures are not quite so high as the previous year. But the most cheering feature in this department is the remarkable success which has attended the male evening classes. The number in actual attendance in the October quarter was 71. At the close of the last Session for the evening classes, the committee held a written examination of those pupils who had been in attendance, and who thought proper to come forward. The result was the award, through the munificence of the President and a few gentlemen interested in evening class instruction, of thirteen prizes in books to the successful candidates. At the examinations of the Society of Arts, and of the West Riding Educational Board, to each of the successful candidates the committee awarded a prize. The number of competitors at the latter was considerably smaller than those of the previous year, and this is partly attributed to the fact that the Board discontinued the practice of offering prizes to pupils attending day-schools. When the evening classes closed for the summer months, the committee endeavoured to keep up the connection with their pupils by providing means for their recreation and amusement outside, but they failed in securing a field sufficiently central and in other respects eligible. The drawing class continues to do its work regularly, there being twelve in attendance. Prizes were awarded by the Science and Art Department to John Goldthorpe, W. Harrison, Wesley North, and C. Swales; and R. J. Milligan, W. North, and C. Swales, having previously passed in three subjects, obtained their certificates. For the first time, too, thirteen of the students have had the privilege of sending their year's drawings to the Department; and Walter Best and C. C. Braithwaite obtained a prize each; while

G. Bedford, C. Swales, Jos. Lilley, Jos. Goldthorp, and John Goldthorp received honourable mention. In this branch the committee have awarded three additional prizes; and they cannot help expressing their conviction that the students in drawing require much more encouragement than they have hitherto received; and they feel persuaded that a few well-selected prizes offered by gentlemen in the neighbourhood could not fail to have a most beneficial effect. There are now about 2,900 volumes in the library, 87 of which have been added during the past year. The monthly circulation for the last quarter averaged about 550, while during the summer months it was not more than 310. A new catalogue has been prepared. Several lectures and entertainments were introduced during the year, and though the lectures have been of a superior character, the committee have still to regret that they were not better attended. At the annual *soirée*, presided over by the late Mayor (H. Oxley, Esq.), though on a Saturday evening, the attendance of the working classes was in no way better than on former occasions. In a pecuniary point of view the committee are thankful to have to report that the subscriptions to the *soirée* fund have exceeded all former ones, and they have been enabled to pay £50 towards the reduction of the debt on the building, as well as £20 for the year's interest, and £20 to the general fund, leaving a balance of £10 5s. 11d. for the purchase of new books, &c., for the library. The general account shows that the income has been £218 15s. 1½d.

EXAMINATION PAPERS, 1867.

The following are the Examination papers set in the various subjects at the Final Examination held in April last:—

(Continued from page 578.)

NAVIGATION AND NAUTICAL ASTRONOMY.

THREE HOURS ALLOWED.

SECTION I.

1. The arc of the great circle joining the poles of two great circles measures the inclination of the planes of the circles.
2. Define the polar or supplemental triangle of a spherical triangle, and prove that the sum of an angle of the primitive triangle and a side of the supplemental triangle is equal to two right-angles.
3. Express the tangent of half the side of a spherical triangle in terms of the angles of the triangle.

SECTION II.

1. When one side of a spherical triangle is a quadrant, obtain expressions connecting the other sides and angles.
2. Having given any two sides of a spherical triangle, and a triangle opposite to one of them, find the other two angles and the third side. Explain the ambiguity in this case.
3. Obtain an expression for the angular radius of the circle which passes through the angular points of a given spherical triangle, in terms of its angles or sides.

SECTION III.

1. Find the compass course and distance from A to B. Given—

Lat.			
A 57° 18'	} N	Variation 2 pts. E.	Long. A 33° 27'
B 38° 15'		Deviation 3° W.	B 33° 27'

2. May 18, at noon, a point of land in lat. 57° 33' N. Long. 127° 16' E. bore by compass S. ½ W. Variation, 1½ W., deviation, 9° 55' E. (Ship's head E. by N.). Afterwards sailed by compass during the next 24 hours, as follows:—

K.	½th	Courses.	Wind.	Leeaway.	Deviation.
83	5	S.S.E.	N.W.	½	0 56' W.
55	8	S. ½ W.	S.E.	2	3° 40' W.
74	6	N.E. ½ E.	N. b. W.	1¼	10° 30' E.

Required the latitude and longitude in on May 19, at noon.

SECTION IV.

1. July 1, 1867, the observed meridian altitude of α Eridani under the S. Pole was 21° 48' 40", the index error was + 1' 10", and the height of the eye was 20 ft. Required the latitude.

2. July 9, 1867 p.m., in longitude 148° 45', the obs. mer. alt. of Moon's L.L. was 46° 10' 10". (Zenith N. of moon.) Index error — 1' 55", and height of the eye 20 feet. Required the latitude.

3. May 26, 1867, p.m., in latitude 31° 31' N., the obs. alt. of Antares (east of mer.) was 15° 49' 45"; at the same time the chronometer showed 8h. 46' 56" (it being May 26, p.m., at Greenwich.) The index error was + 3' 55", and the height of the eye was 17 feet. Required the longitude.

On May 2, at Greenwich, noon, the chronometer was too slow at G.M.T. 1' 8", and its daily rate was 7' 6" losing.

SECTION V.

1. Define course, and show that—

$$\begin{array}{l} \text{Diff. long.} \\ \text{Tan. course} = \frac{\text{Mer. diff. lat.}}{\text{middle latitude sailing.}} \end{array}$$

2. Write down and prove the formulæ employed in middle latitude sailing.

3. Obtain expressions for finding the latitude and longitude of the vertex in great-circle sailing.

SECTION VI.

1. If P be the pole of the heavens, Z the zenith, and S the place of a heavenly body in the celestial sphere, what are the sides and angles of the triangle P Z S?

2. Prove the rule for finding the latitude by equal altitudes of the sun observed before and after passing the meridian.

3. Show that the error in time corresponding to a small error in the observed altitude is the least when the heavenly body is on the prime vertical.

SECTION VII.

1. April 3rd, 1867, at 7h. 10m. a.m., in lat. 50° N., long. 170° W., the sun bore by compass S. 78° 45' (ship's head N.E. b. E., dev. 10° 55' E.) when the observed alt. sun's L.L. was 15° 13' 20", the index error was — 1' 55", and the height of the eye was 12 feet. Required the variation.

2. May 14th, 1867, at 9h. 45m. p.m., in lat. 51° 10' N., and long. 0° 15' W., the following observations were made:—

Obs. alt.	Obs. alt.	Obs. dist.
Regulus.	Moon's L.L.	N.L.
39° 16' 50"	34° 55' 50"	43° 39' 30"
Index error — 1' 35"	— 1' 40"	— 1' 10"

The height of the eye was 25 feet. Required the longitude.

SECTION VIII.

Describe the errors to which the sextant is liable. Show how the index error is found.

PRINCIPLES OF MECHANICS.

THREE HOURS ALLOWED.

1. What is the difference between the investigation of Statics, Dynamics, and Cinematics? Illustrate your remarks by simple examples.

2. State the principal laws of motion. What facts render their truth probable?

3. State and prove the parallelogram of velocities. Is this proposition a mechanical or geometrical one?

EXAMPLE.—Velocities of 5 and 7 are simultaneously given to a small body, in directions making a known angle: investigate an expression for the actual velocity. Find the results when the angle is 30°, 60°, or 90°. What must the angle be when the velocity is 6?

4. What principle do we assume to determine questions on impulsive action between bodies? What action takes place between elastic bodies during impact, as distinguished from inelastic bodies?

EXAMPLE.—A body weighing 12 lbs., moving with a speed of 200 yards per minute, overtakes a body weighing 30 lbs., moving with a speed of 50 yards per minute. What is the common speed after impact, if the bodies be inelastic? What are their respective motions if each be perfectly elastic?

5. State the difference between a simple and compound pendulum; and explain the terms "centres of oscillation and suspension."

EXAMPLE.—What is the distance of these points in a body which oscillates in $2\frac{1}{2}$ seconds?

EXAMPLE.—A clock gains 3 seconds a day when removed to the bottom of a shaft. Find the decrease in the force of gravity.

6. Investigate the formula for the space described by a body thrown vertically upward or downward, and acted upon by gravity.

EXAMPLE.—A stone is dropped into a well, and the splash is heard 5 seconds afterwards. Sound travels 1,100 feet per second. What is the depth of the well?

7. How many systems of pulleys are usually found to be employed? What allowances are practically made for the size and rigidity of the ropes?

EXAMPLE.—A wheel and axle weigh 3 cwt.; the radius of the wheel is 3 feet, and that of the axle 8 inches; the radius of the axis is $1\frac{1}{2}$ inches; the latter is of wrought iron, and rests upon a bearing of cast-iron (coefficient of friction = .075.) Find what power will just support or just raise a ton.

If friction be neglected, what is the power required?

8. Define the term "centre of gravity." Show how to find it in some regular bodies; also in a system of heavy particles, connected by rods whose weight is neglected.

EXAMPLE.—Out of a round boiler plate, 3 feet in diameter, is cut a circular hole, 1 foot in diameter, which just touches the rim of the plate. How far is the centre of gravity of the rest of the plate from the centre of the rim?

If a piece of brass were to replace the iron that has been removed, where would the centre of gravity of the whole be?

N.B.—The comparative weights of brass and iron are as 14 to 13.

9. A body moves about a fixed horizontal axis. Investigate the time in which it oscillates.

EXAMPLE.—A trap-door, 6 feet long and 4 feet broad, is made to swing slightly about a horizontal axis. Find the time of its doing so.

10.—Show that fluids press equally in all directions. Hence prove that a floating body displaces as much fluid as is equal to its own weight.

EXAMPLE.—A diamond ring weighs 70 grains; but when weighed in water 65 grains; the comparative weights of a diamond, of gold, and of water, are as 7, 33, 2. Find the weight of the diamond in the ring.

11. Show how to make and graduate a common thermometer. What scales are commonly used? Express 100° Fahrenheit in each of these scales.

12. "The elastic force of air at a given temperature varies as the density." How has this statement been experimentally proved?

13. Describe one or more varieties of the barometer.

A bad barometer is twice compared with a good one. Its readings are 59.85, 30.16, when they ought to be 30.61, 31. What is the true reading when it appears to be 30.56?

14. A heavy fluid is contained in a vessel, which is made to revolve round a vertical axis. Show that its surface assumes the form of a paraboloid.

15. How is the work of steam computed in a high-pressure engine?

PRACTICAL MECHANICS.

THREE HOURS ALLOWED.

1. Explain what is meant by the *pitch circle* of a toothed wheel. Upon what principle are bevil wheels constructed?

2. Show how the crank and connecting rod are employed in an ordinary locomotive to communicate motion from the piston of the engine to the driving wheel. If the lengths of the crank and connecting rod be respectively 10 inches and 5 feet, what is the distance of the piston from the middle of its stroke when the crank has moved half-way between the dead points?

3. Describe the reversing motion of three pulleys and three bevil wheels, as commonly adopted in planing machinery.

4. What is meant by aggregate motion in machinery? Explain the differential screw. A toothed wheel gears with two parallel racks, whereof one is fixed and the other moveable; if the centre of the wheel be moved through a given space, how far will the moveable rack be shifted.

5. Describe the general arrangement of the wheel work in an eight-day clock. How is motion given to the hour hand? What is the principle of the escapement?

6. Show how change wheels may be employed to alter the relative angular velocities of two parallel axes. What use is made of change wheels in the screw cutting lathe?

7. Point out the use of conical pulleys in changing continuously the relative angular velocity of two parallel axes. If the axes were perpendicular and intersecting, instead of being parallel, what contrivance would you employ to effect a like variation?

8. Explain the working of an atmospheric steam-engine; point out its defects, and describe generally the single-acting condensing engine invented by Watt.

9. Describe the manner in which the steam acts in a locomotive engine, sketching the slide-valve and steam passages.

10. What is the principle of the parallel motion of a beam-engine.

11. Draw the indicator diagrams which you would expect to obtain from a double-acting condensing engine, and also from a high-pressure engine. How would these diagrams assist you in ascertaining the working horse power of each engine?

12. Describe generally some form of direct-acting engine for driving a screw-propeller.

(To be continued.)

PARIS EXHIBITION.

A new and interesting contribution to the Exhibition has just arrived from Siam; the King of that country has sent nine highly-ornamented pirogues, as specimens of the most perfect maritime construction produced in his dominions. The boats are very graceful in form, and attract much attention.

Amongst the many complaints made against the awards of the juries, that of the watchmakers of Besançon attracts perhaps most attention. While Paris, London, and Geneva receive gold medals, Besançon is only awarded silver ones. The people of Besançon claim to have nearly driven all other makers out of the French markets, the imports of watches having fallen from 200,000, in 1845, to 71,000 in 1866; and say that out of 382,000 watches entering into the trade of France last year, 305,000 were made at Besançon and in the mountains of the Doubs, where 30,000 men are engaged in the trade; the value of the products being about £800,000. The Besançon watchmakers, however, speak only of quantity and not quality; and it is well known that the action of the jury in the case of the English watchmakers was most severe. To meet such demands as that of Besançon, and, indeed, to justify certain awards that have been made, two kinds of awards seem to be required, one for excellence of workmanship, the other for commercial ability. An increase in the number of useful cheap articles is a benefit to the community, but a million of common watches could not be equal in the eyes of the jury to one first-rate chronometer. The whole system

of recompenses is surrounded with difficulties, and the short period allowed for the action of the juries on this occasion no doubt complicated the case; it was simply impossible to do the work well in the time given. The appointment of a special commission to revise the list of awards is, to a certain extent, a proof of the validity of the complaints made.

The Imperial Commission has again reduced the price of the season tickets, which are now charged 40 francs for ladies as well as gentlemen. There is little doubt that the original price of 100 francs was too high, and it would appear that the late charge of 60 francs has not been found to answer; but at any rate, the principle of diminishing the price as the season advances seems fair, and is likely to be successful. The number of visitors to the Exhibition has fallen off greatly during the last few weeks, but this is not surprising; the provincials cannot leave their homes at present, there is a lull after the excitement of the awards; and, lastly, the weather has been exceedingly unfavourable. There is no doubt that August and September will bring crowds to the Champ de Mars. Those who come soon will be likely to find more room than those who put off their visits.

A meeting of Foreign Commissioners to the Exhibition took place the other day at the Club-house in the park, when the Comte d'Avila, representing Portugal, was called upon to preside, and it was proposed that an address should be presented to the Emperor, for the reception which the Commissioners had met with from the Imperial Government and Commission; the proposition was carried by acclamation.

A society has been formed, under the auspices of the Imperial Commission, for the encouragement of fisheries, and maritime and fluvial agriculture, by means of publications, periodic exhibitions, by the loan of instruments to fishermen and others, and by the organization of associations for watching over fisheries, preventing poaching, and supplying rivers with fish; a committee of organization, consisting of MM. Gassier, Lacoïn, Pujol, and Roger Desgenette, has been appointed with full powers.

Manufactures.

BOILER EXPLOSIONS.—The engineer's report of the Midland Steam Boiler Inspection and Assurance Company, presented at the tenth half-yearly meeting, and dated 27th February last, says that, up to December 31st, 1866, there were 890 boilers under inspection and 1,300 under assurance, making a total of 2,190 boilers under the care of the company; and that there has been no explosion of any boiler under the care of the company during the past half-year, nor indeed during the whole of the past year, excepting one of a very trivial character. During the five years the company has been in operation, there has been only one serious claim upon the guarantee fund for an assured boiler, and even that would have been prevented if the warning given of the danger had been attended to. Two other serious casualties have happened to boilers under inspection in the five years, one before opportunity of internal examination had been given, and the other after the danger had been reported. During the past year there have been made 11,523 inspections of boilers, and of these 1,380 have been inside and 1,367 in the flues. During the year, 1,168 reports have been sent to owners, pointing out matters needing attention. By far the most frequent cause of injury to boilers has been found to be corrosion, especially externally, where the plates have come in contact with the brickwork; needless danger is also often caused by the over-weighting of the safety-valves. Very great mischief is allowed to be done by want of timely repair, or by the straining of repair hastily executed. Records have been obtained of 70 boiler

explosions, during the year 1866, in Great Britain, causing the death of 85 and the injury of 160 other persons. This cannot be considered the total number, as some may have attracted so little attention as not to be heard of beyond their immediate neighbourhood. The class of boiler which has most frequently exploded, and has caused the most loss of life, is the Cornish or two-flued boiler, internally fired, and the records show that this otherwise safe and economical boiler requires attention to certain well-established details of construction, especially in the strengthening of tubes of large diameter with rings; and also that the shell is liable to corrode, and that corrosion is as dangerous to this as to any other class of boiler. The greatest number of explosions have happened to boilers employed in iron-works and collieries, or mines, and this is hardly to be wondered at, as the number of boilers so employed must far exceed those used for any other purpose; and, as steam was early introduced into these industries, many of the boilers have been used longer than at any other work. The causes which have led to the greatest number of the explosions have been the faulty construction before alluded to and corrosion. In nearly every case the cause was readily to be discovered, and the evil could have been avoided or remedied had the boilers been subjected to proper periodical inspection. The 2,190 boilers under the care of the company are used for the following purposes:—917 in collieries, 1,096 in iron-works, and 177 in other works or mills. They are of the following general description, 1,853 fired externally, and 337 fired internally. The chief points noticed in inspection of the boilers during the past year, and mentioned in the reports to owners, may be classed under the two general heads of those relating to the construction, form, setting, material and workmanship, and others relating to the fittings or working of the boilers. Under the former head, attention has been called to the need of strengthening rings for the large internal tubes, so often the cause of explosion. The weakness of flat ends has several times been detected. Dangerous weakness has often been noticed from large manholes without strengthening rings, and these very frequently further weakened by corrosion, or by the strain of the clamps too tightly screwed to prevent the leaking of badly-made joints. It has been necessary to have some domes strengthened with stays, to compensate for the large holes of 3, 4, or 5 feet diameter, cut out of the shell, although it would have been easier to have left it in with a small hole in the centre for the passage of the steam. Several forms of boiler have been pointed out as needlessly complicated where only a slight advantage has been gained at the sacrifice of durability and facility of cleaning. Many seam-rips have been discovered in boilers made of extreme length for burning the gases from blast furnaces, and it has been recommended that the evil should be avoided by having two or more shorter boilers set in the same straight flue. Extreme difficulty has been met with in flue examinations from the utter disregard of provision for cleaning out or passing along the flues. Many boilers of small diameter are set at great expense, with narrow inaccessible wheel flues, where a plain flash flue would have been better. The external flues of Cornish boilers have been found particularly narrow, and, being rounded to match the shell of the boiler, are most difficult and dangerous to traverse, and yet no part of the boiler requires more careful examination to detect corrosion than where the plates touch the brickwork. Several boilers have been noticed with iron of such bad quality as to crack in the body of the plate and through the rivet holes after working only a few months; and rivetting has been detected where the rivet iron has been so bad, and the workmanship so careless, that the heads could be broken off with the blow of a light hammer. Nothing could be greater folly than to attempt to work boilers of such material and workmanship. Perhaps nothing causes greater annoyance to boiler owners than the difficulty of

getting repairs properly executed, as boilers are frequently permanently injured by repairing with heavier plates than needed, and straining the old plates up to them; and also by carelessly altering the position of seams, so as to destroy the crossing of joints. With regard to the points relating to the working of the boilers, it has been necessary to urge the imprudence of using boilers of great age, as in some that have worked for upwards of thirty years the plates and rivets have been found so much deteriorated as to make it impossible to calculate what pressure they would bear, rendering them very uncertain and dangerous. The needlessly heavy fires under many boilers have been noticed, where the fuel was piled up to within a few inches of the boiler, allowing no room for proper combustion, and greatly injuring the plates by over-heating a small area over the fire, instead of allowing the flame to circulate as far as possible beyond the bridge. This evil is generally associated with another, quite as injurious, and that is regulating the fire by opening the fire door instead of by using the damper, so that the already over-heated plates are exposed to the contracting influences of a stream of cold air. The most frequent evil pointed out is external corrosion from the leaking of fittings bolted instead of rivetted, or from rain allowed to penetrate beneath the brickwork, and yet corrosion could be most easily avoided by proper vigilance. Safety valves are repeatedly found over-loaded to prevent leaking, when the faces require grinding, and sometimes temporarily repaired with sheet lead inserted between the faces. An over-weighted safety valve is a wilful courting of danger. Many fusible plugs have been noticed as defective, consequently leading to a false feeling of security. Self-feeding apparatus has been found deranged, so that too much confidence should not be placed in it. Many boilers have been found without pressure gauges or with the gauges incorrect or badly placed. The general condition, however, of the boilers under the company has improved.

Colonies.

CULTIVATION OF BEET IN NEW SOUTH WALES.—The cultivation for the sake of the spirit and sugar of beet-root is attracting attention in this colony. A patent for the manufacture of spirits from beet-root has been taken out there. It is said that by the last mail steamer the patentees received from France a package of 200lbs. of the seed of the genuine sugar beet.

QUEENSLAND SHIPPING STATISTICS.—It appears that during the year 1866, whilst 569 vessels, of 197,665 tons, were entered inwards at the various ports of the colony, 556 vessels, of 195,991 tons, were cleared outwards. The following table shows the nationality of the vessels with which the trade of the colony is chiefly carried on:—

	Inward vessels.	Outward vessels.
Great Britain.....	37 ..	9 ..
Germany	5 ..	— ..
New South Wales....	419 ..	449 ..
Victoria	22 ..	18 ..
New Zealand	22 ..	25 ..
South America	— ..	12 ..
Java.....	12 ..	18 ..

Publications Issued.

INVENTORS AND INVENTIONS. By HENRY DIRCKS, C.E. (*E. and F. N. Spon.*) This work is divided into three parts. The first takes up the philosophy of invention, considered strictly in relation to ingenious contrivances tending to facilitate scientific operations, to extend manufacturing skill, or to originate new sources of industry. The second treats of the rights and wrongs of

inventors, particularly as affected by the influence of patent monopoly, legally and politically examined. And the third gives an account of the early inventors' inventories of secret inventions, employed from the 13th to the 17th century in substitution of Letters Patent.

Notes.

WATER SUPPLY.—The following letter, addressed to the *Lancet*, gives some interesting particulars relative to the purity of water for domestic purposes:—"We have recently made an examination of the Loch Katrine water as supplied to Glasgow. The water was taken from one of the mains in Glasgow. The result of the examination is calculated to surprise many persons, for the Loch Katrine water has often been cited as a model water. We find that 1,000,000 parts of this water contain putrescible organic matter corresponding to 0.13 parts of ammonia. The numbers for the New River water, which supplies some parts of London, are 0.09, and for the Southwark and Vauxhall Company's water, taken from the Thames, high up the river, 0.20. The Caterham water, and also a spring in the greensand, near Dorking, contain no putrescible organic matter. These facts point to the propriety of seeking for a supply of drinking-water from springs, and not from rivers and lakes. We are, &c., J. Alfred Wanklyn, Ernest T. Chapman, Miles H. Smith. London Institution, Finsbury-circus, July 1st, 1867."

MUSEUM OF THE ARCHIVES OF FRANCE.—The Museum of the Archives of the Empire was opened recently, and, with the fine old historic mansion in which it is contained, will make another addition to the curiosities of Paris. The rooms in which the museum is placed were formerly the apartments of the Dukes of Soubise, and the walls are decorated with forty pictures by the best painters of the eighteenth century. Amongst the contents of the museum itself is the series of Chancery registers, from the sixteenth century to the present time.

CROP OF BEETROOT FOR SUGAR.—Speaking of the great uncertainty attached to the cultivation of beetroot, the *Journal des Fabricants de Sucre* of the 25th July states that, notwithstanding the fact that the heavy rains and great cold at the commencement of the season had injured the prospects of the crop, it has now been saved by the same unseasonable rains and cold at a later period. The plants are being slowly but surely developed, and are thus in a good condition to encounter the great heat which may be expected, and which, if it come, will find the soil, the leaves, and the root admirably prepared to encounter it. Only a month ago a crop could hardly be looked for, such was the backward state and miserable appearance of the plants; but the beetroot is now growing luxuriantly and vigorously, and a favourable result may be expected, although a large portion of the crop is still backward, and will not be able to offer much resistance to any very great heat or prolonged drought. The fears of a large deficit entertained at the commencement of the season may now be dismissed, and, at least, an average crop may be looked for. As to the saccharine richness of the plant, which is so important an element for the manufacturer, as upon it depends a very large portion of the quantity of sugar produced, nothing can as yet be said, and six weeks or two months will have passed before a fair opinion can be given.

PARLIAMENTARY REPORTS.

SESSIONAL PRINTED PAPERS.

Delivered on 17th July, 1867.

Par. Num.	
238.	Bill—Customs Revenue.
239.	" Inland Revenue.
253.	" Customs Duties (Isle of Man).
254.	" Court of Appeal, Chancery (Despatch of Business).
255.	" War Department Stores.

256. Bill—Consecration and Ordination Fees.
 257. „ Dundee Provisional Orders Confirmation.
 440. Salmon Fisheries (England and Wales)—Sixth Annual Report.
Delivered on 18th July, 1867.
 252. Bill—Railway and Joint Stock Companies' Accounts (amended).
 258. „ Hours of Labour Regulation (amended by the Select Committee).
 259. „ Investment of Trust Funds (amended).
 187. Import and Export Duties (Foreign Countries)—Return.
 426. Game Laws (Scotland) Bill—Minutes of Proceedings.
 431. (A) Poor Rates and Pauperism—Return (A) (April, 1866 and 1867).
Delivered on 19th July, 1867.
 357. Harbours of Refuge—Quarterly Reports.
 Colonial Possessions—Reports (Part II.): North American Colonies; African Settlements and St. Helena; Australian Colonies and New Zealand; Eastern Colonies; The Mediterranean Possessions.
Delivered on 20th July, 1867.
 246. Bill—Dublin Metropolitan Police.
 260. „ Sewage.
 264. „ Wexford Grand Jury.
 265. „ Morro Velho Marriages.
 434. Foreign Cattle—Returns.
 437. Westminster Abbey—Scheme.
 438. Temporary Laws—Register.
 439. Public Income and Expenditure (30th June, 1867)—Account.
Delivered on 22nd July, 1867.
 251. Bill—Public Health (Scotland).
 266. „ Trusts (Scotland).
 267. „ Church Temporalities Orders (Ireland) Validation, &c.
 335. (i) East India (Bengal and Orissa Faunine)—Return, Part II.
 448. Friendly Societies (Scotland)—Report.
 452. Army Estimates—Revised Supplementary Estimate.
Delivered on 23rd July, 1867.
 262. Bill—Public Works (Ireland).
 Public Petitions—Thirty-fourth Report.

Patents.

From Commissioners of Patents' Journal, July 26th.

GRANTS OF PROVISIONAL PROTECTION.

Axles—2036—K. J. Winslow.
 Bale fasteners—1872—H. C. Carver.
 Balustrades, &c.—1364—H. R. Cottam.
 Bedsteads—1362—H. R. Cottam.
 Blind pulleys—1800—F. G. N. Perrett.
 Boilers—1637—C. L. J. Carville.
 Bones, &c., crushing—2010—E. and F. Crook.
 Boots and shoes—2064—H. Bell.
 Bricks, &c.—2028—G. R. B. Amott.
 Bridges, suspension—2018—J. E. Whiting.
 Buckle, self-acting, for hoisting, &c.—2025—W. Heyes and W. Bevan.
 Cables, submarine, protection of—1856—M. F. Maury.
 Carpets and rugs—2014—W. Wood.
 Carriage trimmings, &c., coating—1630—A. Albright.
 Carriages, &c., bearings for—2037—B. Hunt.
 Cartridge cases—1835—E. Leahy.
 Chimney tops—1990—J. Capper.
 Compasses—2059—P. M. A. Laurent.
 Corsets—2056—G. T. Bousfield.
 Cotton, &c., preparing—2076—J. M. Hetherington and R. W. Pitfield.
 Doors and windows—2041—R. A. Kennedy.
 Doors, indicating names, &c., on—2062—W. Drury and C. Westrup.
 Engines—2000—M. F. W. Boulton.
 Fabric, elastic woven—1998—A. Turner and W. Hemslay.
 Finger stall for writing with one finger—1969—P. L. F. E. Roussel.
 Fire-arms, breech-loading—2040—E. Hohenbruck.
 Fire-bars—2042—J. Nelson.
 Fires, compound for igniting—2055—A. E. Herrmann.
 Furnaces—1986—J. C. Major.
 Furnaces—2048—J. Kellert.
 Furnaces—2050—C. T. Higginbotham.
 Furnaces, boilers, &c.—2049—G. Sinclair.
 Gas stoves—1653—T. H. Saunders.
 Grain, &c., drying—2023—J. N. Patman and H. M. Davey.
 Hay-making machines—2002—W. Andrews.
 Hoisting apparatus—1965—M. Henry.
 Horse rakes—2060—R. Sims and J. Prest.
 Knife cleaning machines—2094—G. Weedon.
 Laces, metallic eye for—2024—G. Davies.
 Lamps—2082—F. B. Vallance.
 Lamps, safety—1938—D. P. Morison.
 Lanterns, lighthouse—2054—D. M. Henderson.
 Life boats—2052—A. M. Clark.
 Life buoys—2019—J. S. Hood.
 Looking-glass and picture frames—1789—M. Lyons.
 Looms—2020—D. and J. Collinge.
 Looms—2058—E. B. Bigelow.
 Meat, &c., apparatus for mincing—2051—J. H. Johnson.
 Metallic cases, cylindrical—2033—J. S. Henderson and J. Macintosh.
 Moist substances, washing and drying, &c.—1930—G. Gordon.
 Oils, treatment of—2100—J. H. Johnson.

Ores, &c., crushing and pulverizing—2092—T. Archer.
 Paper, &c., preparing, with a solution of perchloride of iron—2006—G. Gabillon.
 Plug valves—1992—I. M. McGeorge and A. Paul.
 Pumps—2022—F. Holmes.
 Railway carriages—2061—J. Walker.
 Railway crossings—2026—W. L. Wise.
 Railways—2038—W. E. Newton.
 Railways, communication between guard and passengers on—2080—J. T. Skinner.
 Reeds and healds used in weaving—2068—J. C. Ramsden.
 Refrigerators—1988—G. Severn.
 Refrigerators—2031—J. Stirk and H. Bycroft.
 Rocks, &c., boring—2027—W. E. Newton.
 Ruling apparatus—2070—J. G. Tongue.
 Saw machines, circular—2030—A. H. Brandon.
 Ships' sails, reefing, &c.—2066—H. Duke.
 Smoke-consuming apparatus—2043—J. B. E. G. Perrin.
 Spindles of spinning, &c., machines—2096—A. de Smet.
 Steel, &c., manufacturing—2046—J. Hargreaves.
 Stoppers for bottles, &c.—2021—H. B. Fox and J. T. Hall.
 Sugar, manufacturing refined—2034—J. H. Johnson.
 Tape winders—1872—J. and J. Cash.
 Telegraphs—2016—W. S. Andrews.
 Thrashing machines—1996—W. Tasker.
 Valves, safety—2053—J. Pasfield.
 Vent-pegs—2067—E. T. Hughes.
 Washing-basins, &c.—2072—I. Baggs.
 Watches and chronometers, manufacturing—2032—J. B. Fraiser.
 Wood, machinery for tenoning—2047—W. B. Haigh.
 Wood to iron, fastening—2057—J. Laing.
 Wood-planing machines—2029—A. H. Brandon.
 Works, &c., construction of sub-aqueous—2039—J. S. Burke and B. Burleigh.

INVENTIONS WITH COMPLETE SPECIFICATIONS FILED.

Boiler tubes, cleaning—2134—W. R. Lake.
 Spinning machines—2117—G. T. Bousfield.

PATENTS SEALED.

223. J. Poole.	300. D. Greig, R. Burton, and F. Parker.
227. W. H. Stallard.	335. W. Rigg.
239. W. W. Pocock.	348. E. Siddaway.
251. P. Ellis.	410. J. Thompson.
258. J. F. D. Donnelly.	672. L. Tiden.
269. E. T. Hughes.	711. W. Trimble.
277. G. Russell.	1162. H. Fassmann.
299. R. D. Napier.	1438. J. Johnson.

From Commissioners of Patents' Journal, July 30th.

PATENTS SEALED.

261. C. W. Siemens.	317. P. M. Parsons.
263. E. J. Padbury.	320. T. Craven.
264. C. E. Brooman.	334. S. Alley.
275. J. A. Murray.	337. J. Graham.
276. W. and D. Fiskien.	338. A. B. Brown.
278. I. Baggs.	340. F. Rosenauer.
280. S. H. Foster.	353. W. Conisbee.
286. N. T. Folsom.	359. A. Ormsby.
287. F. Bauman.	376. R. James.
293. J. Smith and G. Wilson.	383. G. H. Kidd.
296. E. S. Crease.	530. A. V. Newton.
294. J. G. Tongue.	684. H. A. Bonneville.
302. C. P. S. Wardwell.	911. D. Foster and R. Cooke.
314. J. J. Harrison.	1051. W. Clark.

PATENTS ON WHICH THE STAMP DUTY OF £50 HAS BEEN PAID.

1882. J. Livesey and J. Edwards.	2222. J. Paley & T. Rawsthorne.
1842. D. Barker.	1864. W. Irwin.
1853. G. Lansdown.	1904. F. E. B. Beaumont.
2041. B. R. Stonery.	1930. P. G. B. Westmacott.

PATENTS ON WHICH THE STAMP DUTY OF £100 HAS BEEN PAID.

1803. J. Pilkington.	1811. L. Kaberry.
1810. T. and D. G. Fowler.	1837. J. Hamilton.

Registered Designs.

4867—July 2nd—Ladies' under garment, called a chemise—Mrs. Hornblow, 12, St. Ann's-square, Manchester.
 4868—July 2nd—Tooks' reversible school desk—F. G. Tooks, Herston, near Swanage, Dorsetshire.
 4869—July 4th—Sash fastener—Clark and Hunt, 159, Shoreditch, E.C.
 4870—July 4th—An adze—Rabour, Brothers and Co., Birmingham.
 4871—July 16th—An improved bridle for painters' brushes—Finney and Son, Cannon-street, City, E.C.
 4872—July 17th—The centre wheel plough—W. Chamberlain, Dodbroke, South Devon.
 4873—July 19th—The self-adjusting trousers—C. Roe, 27, Old Bond-street, W.
 4874—July 27th—A stand or holder for drinking glasses—Farrow and Jackson, 18, Great Tower-street, E.C.